

REMARKS

Claims 1-24 are currently pending in the application. Claims 1, 13 and 24 are in independent form.

In the International Search Report, there were three cited prior art references, U.S. Patent 5,084,144 to Reddy, et al., U.S. Patent No. 5,501,915 to Hards, et al., and U.S. Patent No. 5,284,571 to Verbrugge. It is respectfully submitted that the prior art references do not disclose the claimed invention.

Referring specifically to the Reddy, et al. patent, the patent discloses preparing platinum electrodes by impregnating gas diffusion electrodes in $\text{Pt}(\text{NH}_3)_4 \text{Cl}_2$ solution and then applying a pulse current of variable lengths of time. Such an application of large pulse current reduces the metals available in electroplating both. In the presently pending application at page 5, lines 13-32, the Reddy, et al. patent is discussed. The Reddy, et al. patent does not disclose a method that produces an electrode that can be widely used, because the power density of the electrodes is insufficient based on the methodology disclosed in the Reddy, et al. patent. In contradistinction, the method of the presently pending claims utilizing cyclic voltammetry enables an electrode to be formed that is capable of being used in a multitude of applications. Since the Reddy, et al. patent does not disclose the cyclic voltammetry of the method of the presently pending claims, the claims are patentable over the Reddy, et al. patent.

The Hards, et al. patent discloses dispersing platinum on particulate carbon and other components including nafion that are then heated to prepare the catalyst. The method disclosed in the Hards, et al. patent does not disclose electrochemical deposition as is recited in the presently pending independent claims. Therefore, the claims are patentable over the Hards, et al. patent.

Finally, the Verbrugge patent discloses using constant potential as

high as -2V vs. Ag/AgCl using a 10mM Pt (NH₃)₄²⁺ solution. This requires an ultra pure platinum solution, since almost all metals can be reduced on the surfaces due to the large change in voltage during the pulse current applications or the application of a large negative voltage. Additionally, the Verbrugge patent does not disclose scanning the potentials up to the reduction potentials of the platinum compound. The presently pending claims recite a method that utilizes cyclic voltammetry and the voltammograms shown in the figures indicate electropolymerization on the carbon surface, which is not shown in any of the cited prior art. Scans obtained using the methods of the presently pending claims show that loosely adhered platinum on the surface was re-oxidized leaving behind platinum catalyst, which is firmly bound to the surface and did not wash out in highly acidic solutions. In other words, the platinum will not leach out as quickly from the surface compared to what would occur on electrodes made by the methods of the cited prior art. Since the methods disclosed in the Verbrugge patent do not disclose the methods of the presently pending claims, the claims are patentable over the cited prior art references.

The above Amendment adds no new matter and is merely made to claim benefit of priority.

Respectfully submitted,

KOHN & ASSOCIATES, PLLC



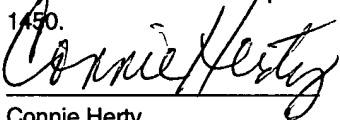
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